KINGS BRIDGE

Tasmania

Submission for an

HISTORIC ENGINEERING MARKER

from

The Engineering Heritage Committee

Tasmania Division

The Institution of Engineers, Australia

October 1992

(4) Comparable or similar works (a) in Australia (b) overseas.#

(5) Features or characteristics setting the work above other engineering works.#

(6) Contribution towards the development of engineering and/or the nation.#

For all Nominations

The following documentation is attached in support of the nomination:
(List all documents, photographs, etc, and enclose black and photographs).

The nomination has been discussed with the owner of the work who has indicated
LAUNCESTON CITY COUNCIL HAS AGREED TO SUPPORT THE NOMINATION AS INDICATED IN
THE LETTER OF 8th JUNE 1990 COPY ATTACHED.
(Include statement regarding owner's attitude)

A copy of this submission has been sent to the Secretary of the TASMANIA

Division at HOBART
(For completion by a nominating body other than a Division)

In the event of this nomination being approved the nominating body will organise an suitable presentation/ unveiling ceremony.

(Chairman of Nominating Committee

(Secretary of Nominating Committee

* Delete as appropriate
Where there is insufficient space, attach additional papers

Commemorative Plaque Nomination Form

Date: 29th July 1991

To:
Commemorative Plaque Sub-Committee
The Institution of Engineers, Australia
11 National Circuit
BARTON ACT 2600

From ENGINEERING HERITAGE COMMITTEE
NORTHERN TASMANIA GROUP
THE INSTITUTION OF ENGINEERS
AUSTRALIA
(Nominating Division or Branch)

The following work is nominated for an *Historic Engineering Marker/National Engineering Landmark award:

Name of work KING'S BRIDGE

Location, including address and map grid reference if a fixed work Spanning the South Esk River at Launceston, Tasmania

Grid Reference 55 G.E.Q. 105 122

Owner CITY OF LAUNCESTON

In support of the nomination the following information is provided:

For an Historic Engineering Marker (HEM)

(1) Proposed wording on HEM# SEE ATTACHMENT

(2) Justification - please make data as complete as possible.#

SEE ATTACHMENT

For a National Engineering Landmark (NEL)

(1) Date of construction (or other significant dates).

(2) Names of key professional personnel associated with the work.#

(3) Historic engineering significance of the work.#

KING'S BRIDGE

SUBMISSION FOR AN ENGINEERING MARKER

JUSTIFICATION

This bridge was designed by W.T.Doyne in 1861. At that time no facilities existed locally for the manufacture of such a structure and it was decided to have the arch manufactured by Charles de Bergue and Co. of Manchester, England, assembled in sections of a size suitable for shipping and forwarded to Launceston for final assembly.

Because of the problems associated with shipping the arch such a distance the design aimed at keeping the structure as light as possible. Robert H.M.Garvie in his description of the bridge writes as follows. "It is noteworthy that the total weight of all ironwork in the first span sent out in 1863 was recorded as no more than 105 tons. For a main road bridge of 190 feet span at that date this seems to me a remarkable achievement. Doyne's bridge represents a usage of only eighty two pounds of iron for each square foot of deck and this figure compares very creditably with practice today, despite all the improvements in methods and adoption of entirely new materials since 1863".

The first arch was only 15 feet wide and in 1903 another arch of the same width was constructed by Salisbury's Foundry of Launceston and placed in position on January 1904 five feet downstream from the original making a structure with a total deck width of 35 feet. As there was difficulty, at this site, in site erection of the arches they were, in both instances, fabricated on a floating dock and towed into position to be lowered into place by the falling tide. A number of other bridges have been placed in this manner but no other instance is known of an arch bridge being so placed.

It is now 128 years since the first arch was brought into use, and there has been a tremendous increase in the weight and volume of traffic, yet the structure designed so economically is still serving and it appears likely that it will continue to do so for many years.

KING's BRIDGE

DESIGN AND CONSTRUCTION

In the early years of the nineteenth century there was a growing community on the west bank of the Tamar River which was served by a punt for vehicles and stock and a ferry for passengers. By 1860 there was pressure for a bridge to provide for uninterrupted service to the area. The trustees of the West Tamar Road Trust had been active in seeking a solution to the problem for some years,but had been unable to find an answer which could be afforded.

In 1861 W.T.Doyne arrived in Tasmania to survey and construct the Launceston - Deloraine railway,which was to be the first railway in the state. Doyne was Irish-born and entered tertiary education at Durham University in the engineering faculty at the age of sixteen. He studied there for less than a year and in 1840 he was bound as an apprentice to the Resident Engineer of the London and South Western Railway. He worked on the Gosport branch railway,and went to work on railways in Germany,Ireland, West Flanders,then under Robert Stephenson for the London and North Western Railways until 1847.

Doyne was then appointed Resident Engineer and Manager of the Rugby and Leamington Railway. It was for this railway that he designed and built a wrought iron lattice bridge,which was the subject of two prize winning papers he presented to the Institution of Civil Engineers and he was admitted to full membership of that body in 1852.

Doyne then became interested in mineralogy and geology and spent several years engaged in the mining and founding of iron in South Wales. At the outbreak of the Crimean War he was appointed to organise an Army Works Corps and in 1855 he was sent to Balaclava in charge of 2400 tradesmen and labourers with the task of assisting Lord Raglan's army in roadmaking. Following this Doyne worked on the survey and construction of a railway linking Kandy and Colombo in what is now known as Sri Lanka. In this project he encountered technical and personal difficulties and deteriorating health obliged him to seek a more salubrious climate. He sailed to New Zealand in 1860 where he completed thesurvey and construction of a railway for the Dun Mountain Copper Company,near Nelson. This was the first railway in New Zealand.

Following his sojourn in New Zealand Doyne came to Tasmania. Having completed the survey and report on the Launceston to Deloraine railway there was a period of waiting while the report was considered by Parliament and during this period the West Tamar Road Trust approached Doyne to design and erect the bridge which was to become the King's Bridge. A comprehensive report on this structure was published in the Launceston Examiner of 15th. December 1863. four days after the official opening and the following is an abridged version.

In the early part of 1862 Messrs. Doyne and La Touche were approached by the West Tamar Road Trust to consider a number of alternatives for a South Esk River crossing to serve the west bank and report thereon. In due course they reported with a recommendation for a bridge of their own design. Their proposal was for a true arch of wrought iron spanning 190 feet or about 58 metres with a rise of 20 feet (6metres). It was formed of two arch bows fifteen feet apart,each being four feet in depth and twenty inches wide. The total weight was 105 tons. This proposal having been accepted arrangements were made for the members of the structure to be fabricated by Charles de Bergue & Sons of Manchester,England and to be shipped out and assembled in Launceston.

As Doyne was about to return to England to prepare for settling in Australia permanently,it was arranged for him to supervise the manufacture at de Bergue's while La Touche remained in Launceston to prepare the abutments and approaches. The contract for fabrication was let in December 1862. It was shipped from London, to which it was transported by rail, in March 1863 and was delivered in Launceston in July. It was then assembled at Salisbury's Engineering Works on a floating dock and in due course taken to the site at high tide and allowed to settle in place on the ebb tide. The deck was formed of three rows of wrought iron plates five feet in width making up the fifteen feet width of the bridge. The whole operation was completed in time for the official opening on December 11th. 1863 less than twelve months after the signing of the contract.

The structure described in the foregoing account adequately served the needs of the community for many years.but by 1900 traffic had increased to the point where the single lane bridge could no longer cope and a decision was taken to build a duplicate span and place it alongside the original. A contract was let in 1903 to Salisbury's Foundry to construct the new span of stronger material but otherwise identical to the original and the new section was erected on the same floating dock that had been used for the old arch. On 12th. January 1904 it was floated into position five feet downstream from the original and allowed to settle into place. The new span was then decked with wrought iron plates and the gap between the two structures also decked to provide a deck of thirty five feet width.

This bridge proved capable of serving the needs of the Trevallyn and West Tamar community until the ninety seventies when the new Paterson Bridge was erected and connected directly to the West Tamar Highway leaving King's Bridge to serve the needs of the Trevallyn area which in 1990 it is still doing successfully.

In 1988 it was found necessary to expose the deck plates and carry out any repairs that were indicated by inspection as being required. When the road surfacing had been removed it was found that the wrought iron deck plates were in remarkably good condition considering the time they had been in service. At that time the plates on the original span were 125 years of age while the remainder had been in use for 84 years. There was some deterioration mainly along the edges where water had percolated through the surfacing materials and repairs were carried out as necessary. It can now be confidently anticipated that the old bridge will continue to give service for many years to come.

KING'S BRIDGE

SUBMISSION FOR AN HISTORIC ENGINEERING MARKER

PROPOSED WORDING

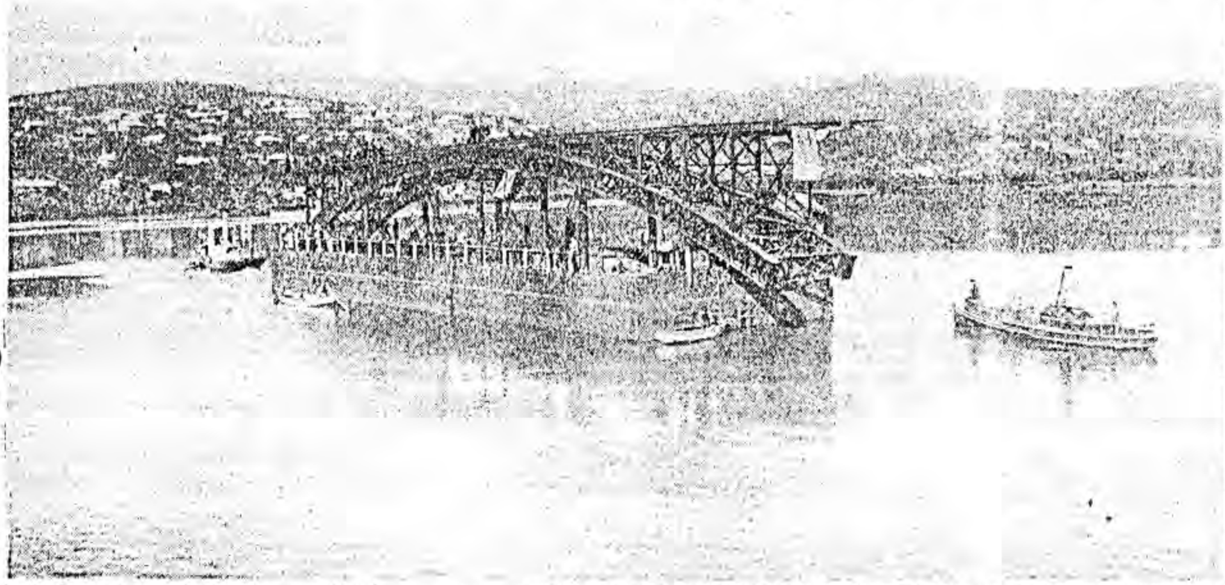
This wrought iron arch bridge with a span of 190 feet (60 metres) was designed by Engineer William T. Doyne, constructed in Manchester, England, transported to Launceston and assembled on a floating dock. Floated into position and lowered on to its abutments on the receding tide. The bridge was completed in 1864. It provided a vital link with West Tamar region. A duplicate span was constructed by Walkers Foundry and floated into position in 1904.

SATURDAY FEATURES

Two into one goes all the way to Trevallyn

King's Bridge — a marvel by halves

By MARTIN STEVENSON



• The second section of King's Bridge is floated out of the North Esk from Salisbury's Foundary in January, 1904. She is towed by the tug Tarnna.

The closing of King's Bridge for necessary repairs from next Monday again throws into relief that most prominent, and dramatic, of Launceston structures.

Long considered by the dwellers of the hillside suburb of Trevallyn as "their" bridge, it is living proof of Launceston's early prosperity.

Yet King's Bridge is not really *one* bridge at all.

The vital artery is two structures built 40 years apart.

The first width of the bridge was constructed in 1863 for the West Tamar Road Trust, following increased development along the river. The only way to get across the South Esk up to this time had been by punt or ford during low tide.

The 1863 "half" of the bridge was designed by Tasmanian engineer W. T. Doyne, who also constructed the Launceston and Western Railway.

Born in Ireland, Doyne spent most of his early career working on engineering projects in England, Ireland and Germany.

As no local engineering shop in the 1860s was capable of handling such a large project, Doyne, ever the innovator, designed the bridge in Launceston and sent the plans to the Manchester, England, engineering firm, C. De Bergue & Co. Within three years, De Bergue & Co. had sent back the 105 tonne bridge in completely knocked down form, for 2000 pounds.

A further 10,000 pounds was spent on freight, insurance, approaches and building — rather like a giant Meccano set — at Launceston's Salisbury Foundry. The bridge was subsequently floated into position — a feat equalled in 1904 using the same technique, (indeed the same floating platform).

The 1864 structure had a single roadway and two footpaths.

This shining example of early technology was opened by the Premier, James Whyte, on December 11, 1863, with the usual exaggerated pomp and ceremony of the times.

A procession from Princes Square led by the Volunteer Rifles (who fired a salute to the bridge at the wrong moment), and the mayor and aldermen, clad in evening dress and white gloves witnessed the opening and then "100 of the more important citizens" adjourned to the Mechanics Institute for a celebratory dinner.

"There were numerous toasts, many speeches and interludes of organ music," according to a contemporary report.

The second section of the bridge The massive structure was floated down to berth alongside the original structure to be fastened to it on January 12, 1904.

The method of ensuring a true match between the two bridges was quite ingenious.

As the Weekly Courier put it on January 16, 1904:

"At half past seven o'clock on Tuesday morning the unique spectacle was presented of a huge iron bridge, gaily decorated with bunting, being slowly towed by the tug-boat Tarnna to the mouth of the Cataract Gorge, Launceston, where it arrived shortly before 8 o'clock.

"The floating dock, on which the arches had been erected, was manned by a crew comprising nearly the whole staff of the Salisbury Foundry Company.

"The dock, with its burden, was soon placed in position, the ends of the great steel arch being some feet above the basements on either side of the chasm, and everything was made fast pending the fall of the tide.

From this point, the Weekly Courier records that the "tide ran out quickly" and the "huge arch sank arch gradually lower and lower, until the ends were within a few inches of the massive iron plates let into the concrete abutments.

"It was then the most ticklish time," according to the Weekly Courier.

At 20 minutes past 11, on January , 1904, the two bridges finally became one "amid the cheers of the spectators."

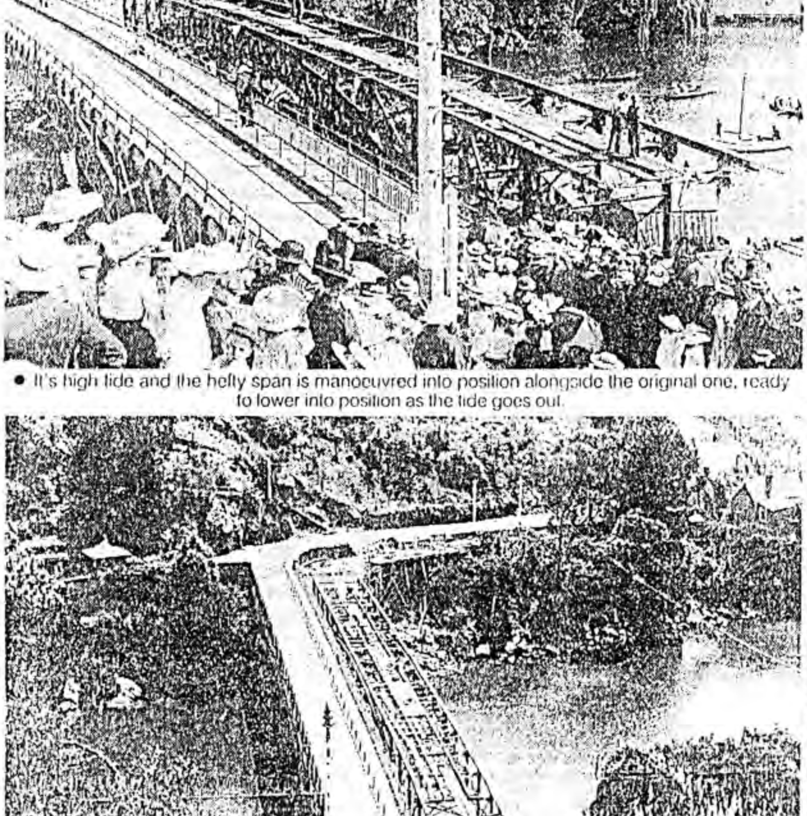
For the first two months the half of the bridge closest to the Tamar River was for foot traffic only, while over 80 tonnes of steel were used to clothe the skeleton.

The bridge has had two constantly changing names. In 1904, the bridge was named King's Bridge from the original 1864 christening of South Esk Bridge. In 1918, the bridge again became the South Esk Bridge — the name King's Bridge being given to the new construction over the North Esk River at Charles St. In August, 1957, Launceston City Council for the second time renamed the bridge across the Gorge, King's Bridge.

An interesting sidelight from today's point of view is that the contract stipulated that "no stoppage of traffic must take place" on the original 1864 side of the bridge while the more recent structure was being made ready for traffic.

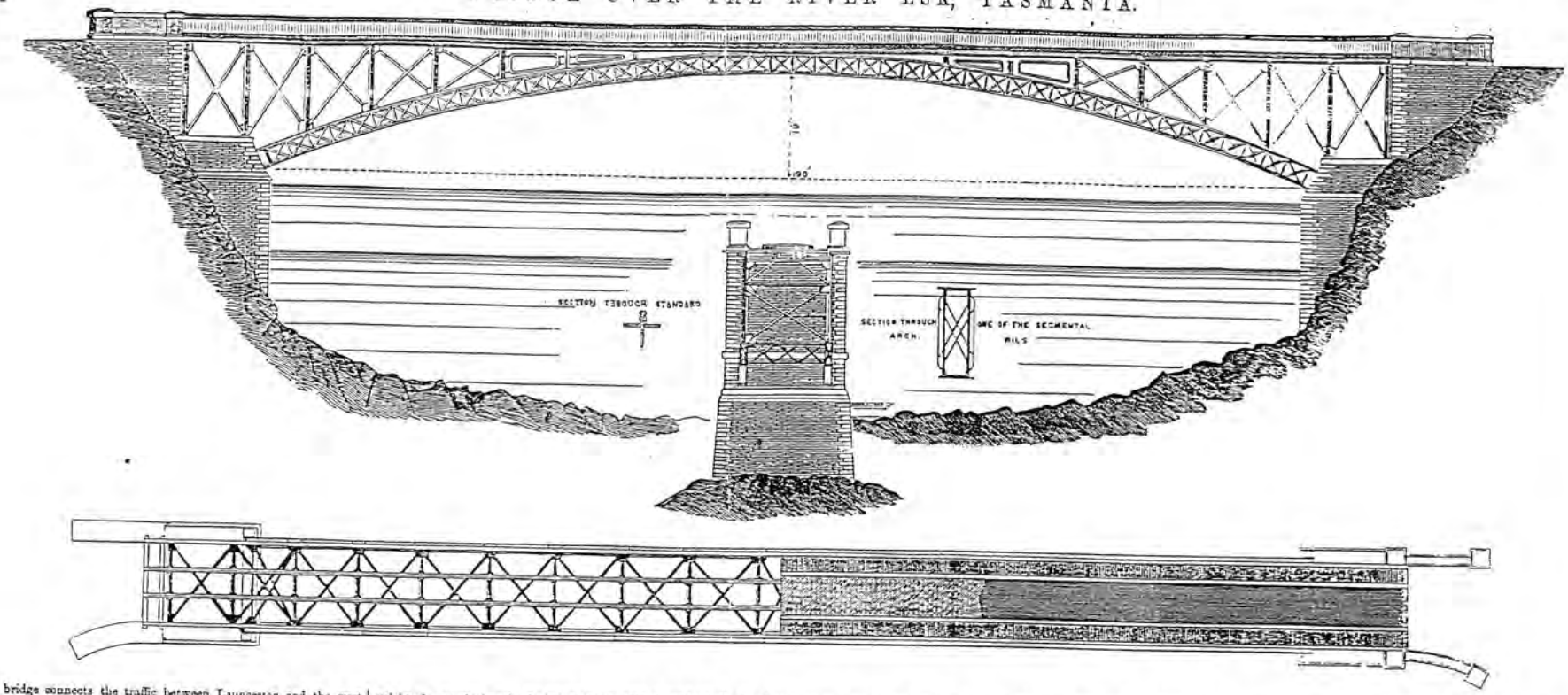
If only a similar ruling could be in-

• It's high tide and the hefty span is manoeuvred into position alongside the original one, ready to lower into position as the tide goes out.



• The span in position. There followed two months of work to put the steel cladding on its surface. During that time the original

BRIDGE OVER THE RIVER ESK, TASMANIA.



This bridge connects the traffic between Launceston and the west bank of the Tamar and adjacent districts. Such a structure was long wanted on account of the difficulty of crossing the channel of the South Esk, where it enters into that of the Tamar. To find a substitute for the ferry punt employed since the first settlement of Launceston, the trustees of the road district took advantage of the presence, in the colony, in 1862, of Messrs. Doyne and La Touche, to consult them on the matter, and finally to entrust them with the design and erection of the work. The contract for the ironwork and the execution of all the details of the engineer's design were given to Messrs. Charles de Bergue and Co., of the Strangeways Ironworks, Manchester, to whose courtesy we are indebted for the drawings from which we have made the accompanying engraving of this beautiful bridge. It consists of a light wrought iron arch of 190ft. span, completed in Tasmania about two years ago, with 20ft. rise from the chord line to the under side at the centre. The form of this arch is nearly that of a catenary curve, and it springs off cast iron bed-plates which rest upon brick abutments let into the solid rock. It is composed of two bows 15ft. apart from centre to centre, each 4ft. deep, and 20in. wide. The tops and bottoms of these bows are constructed of wrought iron plates and angle irons, connected together by radiating pieces of T-iron and diagonal braces of angle iron. The roadway is laid upon a line of nearly flat girders, resting on the top of the arch at the centre, and extending to the abutments at each end, but carried between these points upon vertical wrought iron columns, which stand on the tops of the bows, being diagonally braced together with angle irons, together producing open spandrils of great strength. The bows, spandrils, and roadway girders are all diagonally braced together in every direction. The bridge is 220ft. in length on the roadway line, with 190ft. clear span of arch. The width of the platform between the handrails is 15ft., divided into a footpath of 3ft. 6in. on each side, and a roadway in the centre. The weight of wrought iron in the bridge is 105 tons, or under half a ton to the foot run; the weight of the cast iron railing and bed plates, 15 tons.

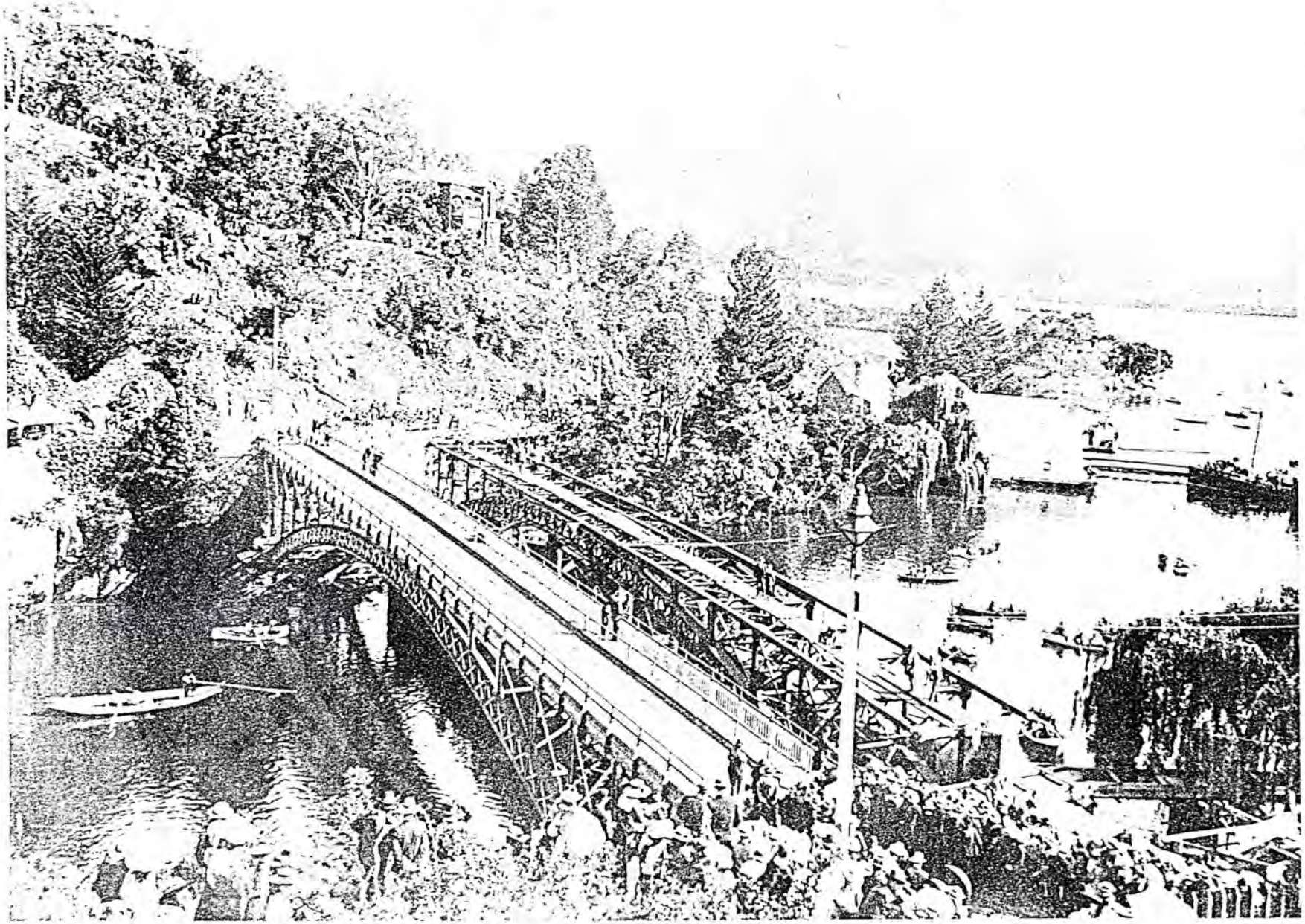
The mode in which this bridge was erected was considerably more novel than its construction. Many flat-girder bridges have been constructed on pontoons, and floated to the piers prepared for them; but there is, perhaps, no instance on record of an arch being so dealt with. The height of the roadway of the bridge is nearly 80ft. above the bottom of the gorge; the depth of water is about 50ft. at high water spring tides, and the rush of water, when the river is suddenly flooded by storms, is almost irresistible in its force. All these considerations united to make the construction of a scaffolding across the gorge impracticable except at an enormous cost; and the engineers, therefore, decided to put the work together on a floating dock, carry it to its place, and deposit it on the abutments with the fall of the tide. Accordingly, as soon as the iron work was landed from the ship Syren, which brought it from England, the task of fitting together the pieces constituting the arch of 190ft. span, was commenced on the floating dock. This was performed under the superintendence of Mr. La Touche, assisted by the foreman who came from England with the bridge. The putting together of the arch having been completed, it was determined to attempt the removal of the dock with its valuable burden to the cataract. The dock being hauled out into the stream a tug was then lashed alongside and steadily moved off, accompanied by other boats well manned, and furnished with warps and other appliances. An hour later, by nine o'clock, the bridge had been towed up safely close to its destination, and the dock was secured by warps fastened to each side of the gorge. The steam tug then cast off and returned to the wharf. The dock was then gradually swung round by means of the warps, in order to see if the arch fitted into the abutments. This fact having been ascertained, the dock was swung back again and secured in the middle of the stream by strong ropes passing from each side fore and aft to the banks of the river, as the arch could not be permanently placed until iron plates had been affixed to the sloping sides of the abutments, and before putting on these it was requisite to ascertain whether the arch would fit, or whether any alterations in the abutments would be necessary. There was, however, no necessity for any alteration, as it was found that when the plates were fastened down the fit would be quite close. All preliminary arrangements having been completed, the dock was swung round at high tide and secured between the abutments. At nineteen minutes to three o'clock the arch rested on its bed, and at twelve minutes past three o'clock the dock, with the scaffolding, floated from beneath, leaving the arch firmly wedged in its permanent position.

With regard to the iron work, we must mention that the bows were rivetted together in 12ft. lengths, and all the other parts in equally convenient lengths for shipment—in all, comprising upwards of 500 pieces, each piece composed on an average of ten pieces, the whole fastened together by nearly 24,000 rivets—the cost of the iron work in the yards at Manchester was a little over £2,000, to which has to be added the cost of transmission and erection, the expenditure on road approaches, abutments, &c., which raises the entire expenditure of the bridge, when complete, to about £6,500, exclusive of engineers' fees, or £5 18s. 2d. the square yard.

The Thames Conservancy.—According to the general report of the proceedings of the Conservators of the River Thames, from the 1st day of January, 1865, to the 31st day of December, 1865, the conservators state that they have given continued attention to the regulation and mooring of ships, the improvement of the river by dredging, the maintenance of buoys and beacons, of the steamboat piers, of the locks, weirs, and towing-paths, of causeways and landing-places, as well as the removal of wrecks and obstructions, the prevention of nuisances, or of the pollution of the stream by the discharge of noxious matters into the river or its affluents; and that they have met 129 times for the despatch of business. During the last year they received for tonnage dues, £22,879 15s. 4d.; for material raised from the dredgers and supplied to the contractors for the Thames Embankment, pursuant to 25 and 26 Vict. c. 93, s. 10, £10,382 8s.; and, with other items, and a balance on the 31st December, 1864, of £17,537 17s. 5d., they have now a total of £74,532 6s. Of this sum they have expended £58,796 17s. 1d.; £11,103 6s. 11d. having been paid in salaries to masters and crews of steam dredgers, lighterage, and repairs to vessels.

The Official Report on the Snider-Enfield.—On Saturday last were published the minutes of the Ordnance Select Committee on Mr. Snider's method of converting the Enfield rifle into a breech-loader. Strange to say, shortly after their issue all these reports were recalled apparently from their embodying some blunder of the editor or printer. With one of the minutes are printed the opinions expressed by Major-General Hay, at the Horse Guards, on the question generally. The Inspector-General of Musketry expressed "a most decided preference for a system in which the cartridge should contain its own means of ignition;" and that for the sake of such a cartridge, "it would be worth while to retain the present calibre if it cannot be otherwise secured," though he considers that there is no longer any question as to what is the best bore, viz., 0·451—all gunmakers of eminence being agreed on this head. He fears, however, the difficulty with Snider's gun of withdrawing the cartridges. He "would prefer a cartridge with a wad that could be fired through, if such a thing can be made gas-tight and give sufficient good shooting," and a mechanically fitting bullet which should also be hardened.

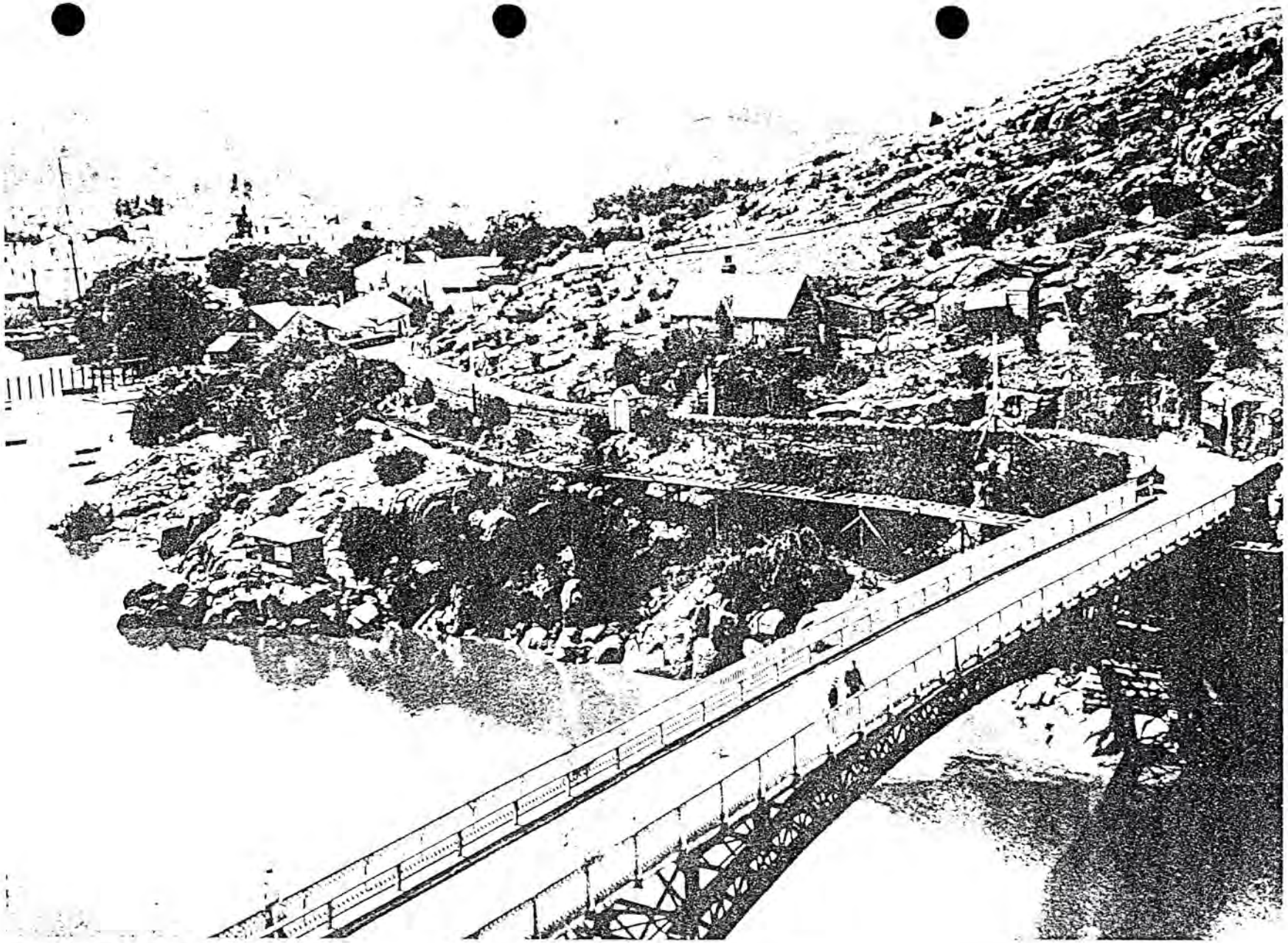
Fancy Ironwork.—Monsieur Conadeau, a native of the French slopes of the Pyrenees, an ingenious and tasteful artificer in iron filigree, has constructed a large flower-stand, modelled, in compliment to our parliamentary system, after the palace at Westminster. It is about nine feet long by four feet and a half wide, surrounded by moats and canals for gold and silver fish. The work has taken M. Conadeau three years to finish, and may be seen at 55, Charlotte-street, Fitzroy-square.



18. EXTENSIONS TO KING'S BRIDGE (1904)

Points of interest : Floating dock
Ferry and types of small boats
Old Tamar Rowing Club sheds

IN THE FORTY YEARS till 1900, Trevallyn and the West Tamar grew so rapidly that the one-lane bridge was not wide enough. The Salisbury Foundry in Launceston was asked to build another arch which was made of stronger material. A great number of people watched the event from both land and water. The Tamar rowing sheds in the photograph were pulled down in 1971 to make way for the new Paterson bridge.



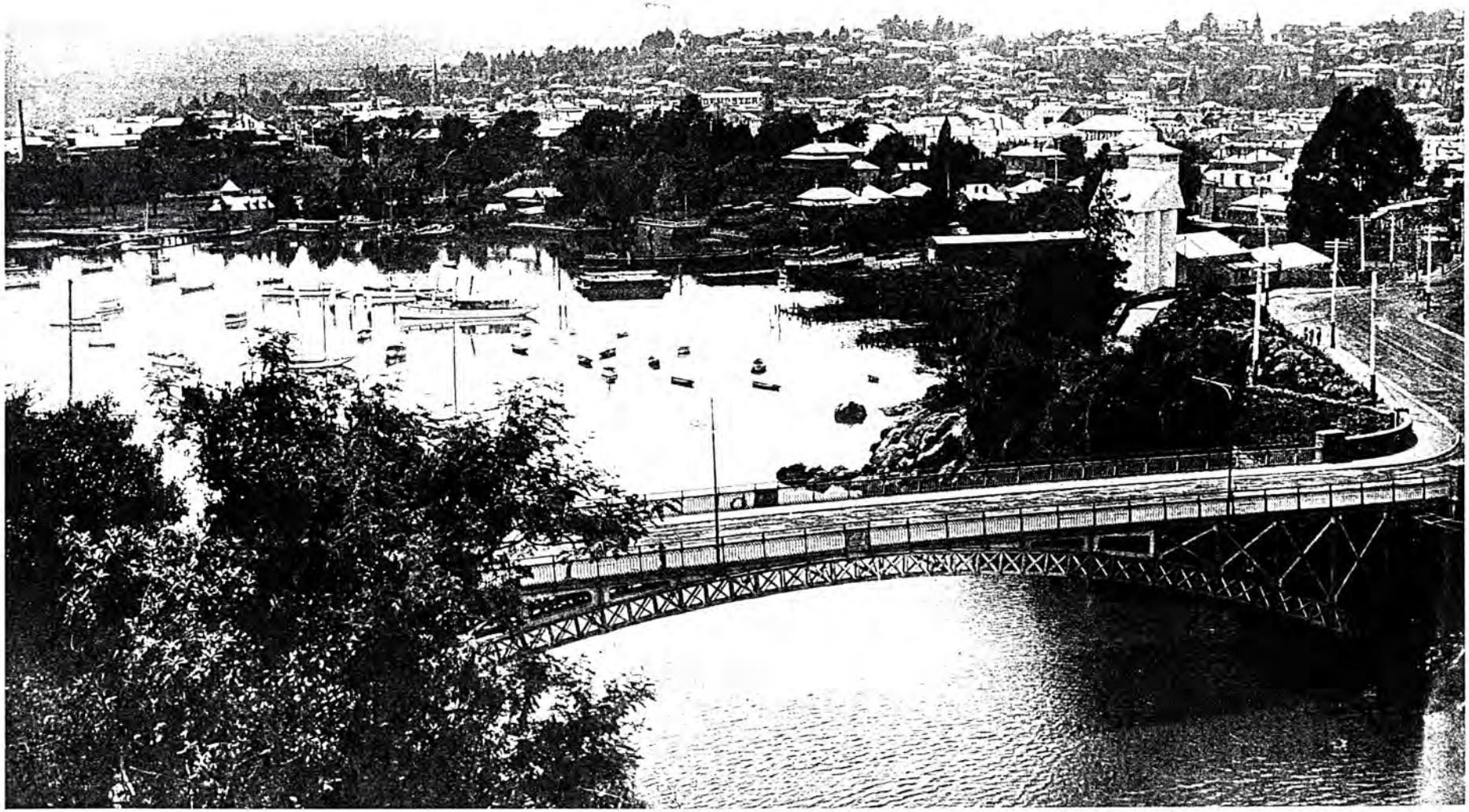
22 March 1988
File - Kings Bridge (copy in biographies - Joyner)
Photo prints - Esk Life
St Tamar & Esk Rep - Hobart
1978.

17. KING'S BRIDGE (1867)

Points of interest : Type of bridge
Toll house
Mill race

THE KING'S BRIDGE over the South Esk river joined Launceston and the west bank of the Tamar river. The bridge was completed in 1864 at a cost of nearly £12,000 and had a span of over 60 metres. It was placed into position at high tide from a floating dock just four days before heavy rain would have caused it to sink. There was a toll on the bridge for some years, and the toll house can be seen in the photograph.

11/8/1863



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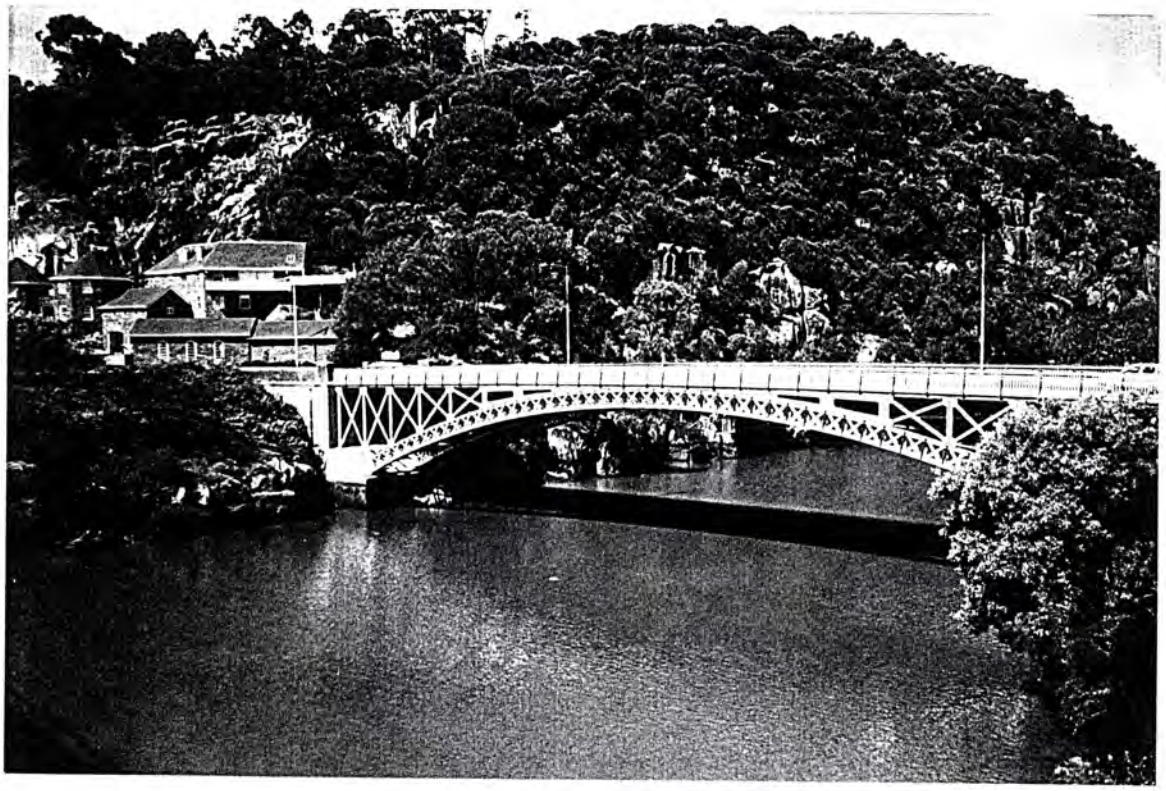
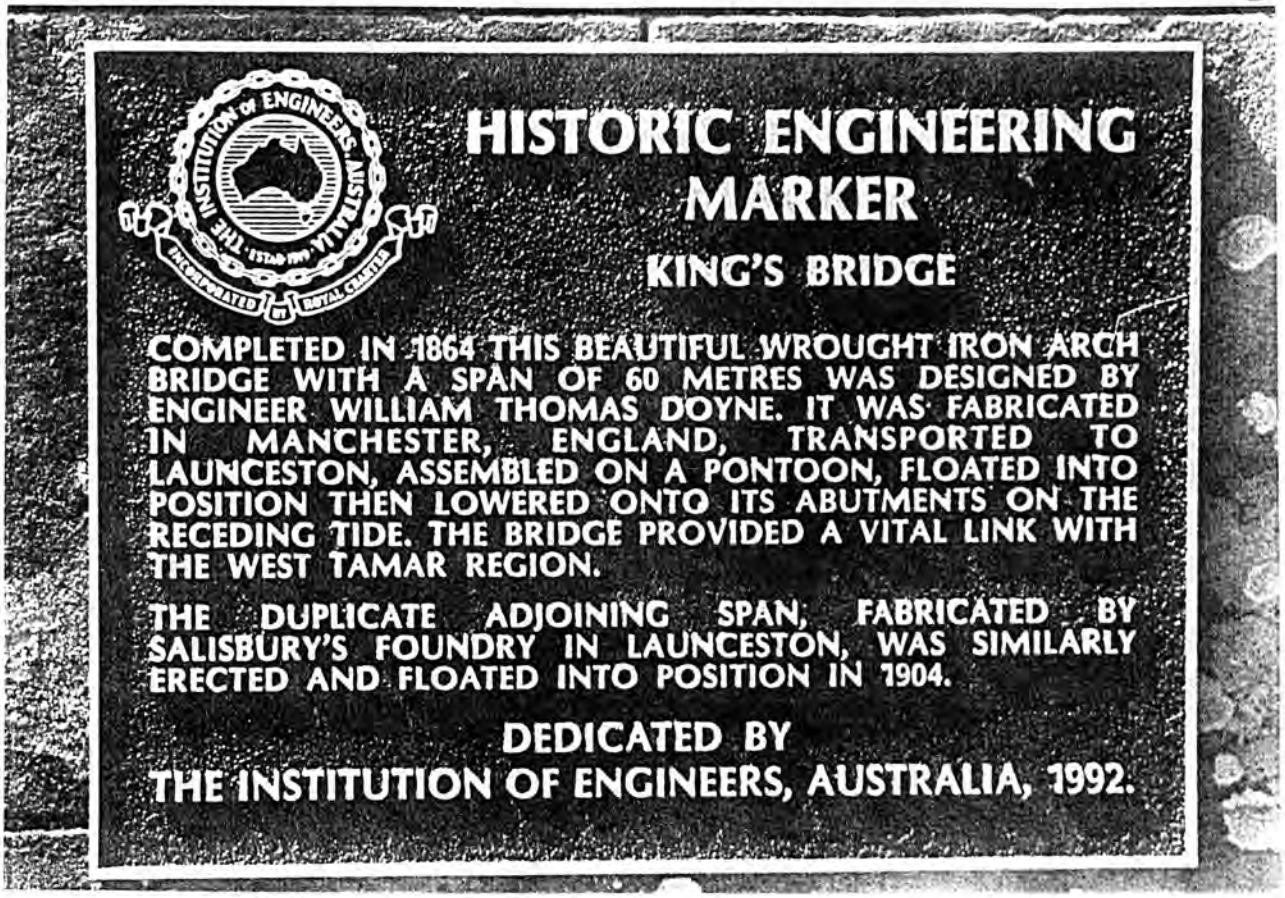




HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON,

Bronze plaque after mounting on sandstone abutment on western end of bridge.

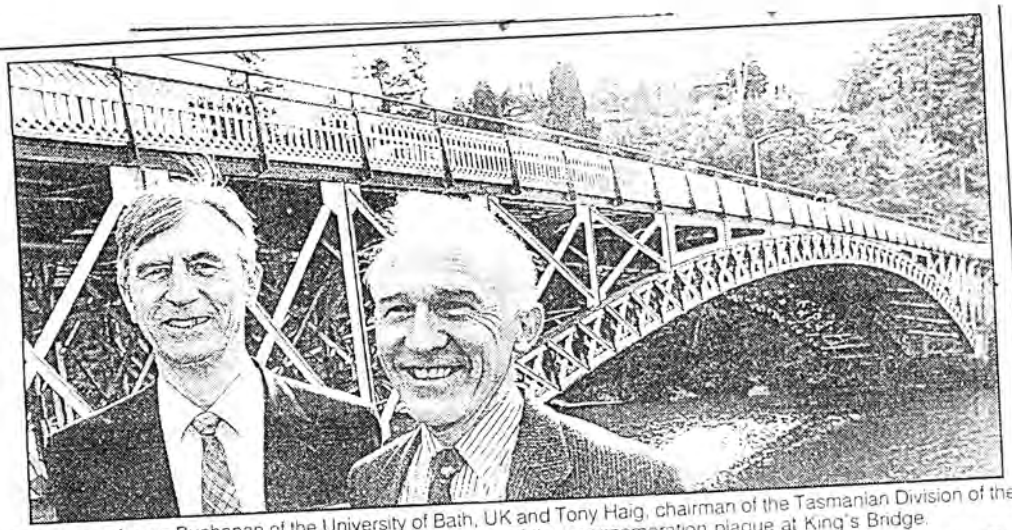
Neg. 92-1-10A. Taken 13th. November 1992.

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON,

Western approach to the bridge showing location of marker. It is mounted on the shadowed side of the sandstone abutment in the centre of the photograph

Neg. 92-1-11A Taken 13th. November 1992.

Historic plaque for King's Bridge



Professor Angus Buchanan of the University of Bath, UK and Tony Haig, chairman of the Tasmanian Division of the Institute of Engineers Australia at the unveiling of the commemoration plaque at King's Bridge.

Launceston's original link over the South Esk River, King's Bridge, was finally commemorated by the Institution of Engineers, Australia on October 3.

The commemoration, only the second of its type in Tasmania (the first was the Richmond Bridge), was symbolised with a historic marker.

The Institution of Engineers, Australia was holding a special meeting in Hobart and made the journey to Launceston especially to pay tribute to this magnificent structure.

The Australian Engineering plaquing programme has been developed as a means of recognising noteworthy historic engineering works and sites. Programmes of this kind have been run in the US and the UK for several years, with the Australian programme beginning in 1985.

Officially opened in 1864, the graceful wrought iron structure did away with the need for ferry services for those wishing to reach the West Tamar.

The West Tamar Road Trust considered several proposals before finally accepting that of Mr W.T. Doyne who was also involved in the planning of the Launceston and Western Railway.

It was fabricated at the Manchester works of De Bergue & Co. before being shipped to Tasmania where the 105 ton span was assembled on a pontoon and placed in its present position on the receding tide on December 11, 1863.

The duplicate adjoining span, fabricated by Salisbury's Foundry in Launceston, was similarly erected and floated into position in 1904.

City of Launceston

28.6.90
Plaque file - Bridges CF5.1 KINGS BRIDGE,
from Nth. Sub. Ctee

Reference No : 45.01.00.000(C)
Folio 9200

28th March 1990

Mr. T.C. Hughes
Hon. Secretary
Northern Tasmania Group
Engineering Heritage Sub-Committee
229 West Tamar Road
LAUNCESTON TAS 7250

Dear Mr. Hughes,

COMMEMORATION PLAGUE - KING'S BRIDGE

I refer to your letter of the 13th March 1990, seeking Council's approval for your Committee to commence proceedings to have the King's Bridge recognized and approved as an historically significant engineering works, and as such be commemorated by the placement of a plague. I subsequently also spoke to Mr. Ken Hose on this matter, and I advise that it is my intention to submit a report to Council for its meeting of 23rd April 1990, recommending that Council support and approve your Sub-committee's proposal to seek the appropriate recognition for the King's Bridge.

I apologise for the fact that this matter missed the closing time of the Agenda for it to be dealt with by Council at its Meeting of the 2nd April 1990.

I herewith return your publication Australian Engineering Plaquing Programme, as I have taken extracts from the publication to provide to Council.

I will advise you of Council's decision in the week following the 23rd April, 1990.

Yours faithfully

M. REYNOLDS
Acting Town Clerk

Town Hall, St. John Street, Launceston, Tasmania 7250.
P.O. Box 396. AusDoc DX 70127, Launceston.
Telephone (003) 37 1111. Fax (003) 37 1117.

City of Launceston

28-6-90
Plaque file CF 5241
from Nth. Sect. Com.

Reference No. 45.01.00.000(C)
Folio

8th June, 1990

Mr T C Hughes
Hon Secretary
Northern Tasmania Group
Engineering Heritage Sub-Committee
229 West Tamar Road
LAUNCESTON TAS 7250

Dear Mr Hughes

COMMEMORATIVE PLAQUE - KING'S BRIDGE

I refer to my letter of 28 March 1990, and firstly sincerely apologise for the delay that you have experienced in receiving a reply to your request of 13 March 1990.

I am pleased to advise that at its meeting of 4 June 1990, Council endorsed the action that you proposed to take, and agreed to support the application by the Northern Tasmanian Group Engineering Heritage Sub-Committee for recognition of King's Bridge in accordance with the Australian Engineering Plaquing Programming.

On behalf of Council I wish you every success with your application, and trust you will keep us informed as to progress on this matter or where we may be of further assistance.

Yours faithfully

for D.G. JONES
Town Clerk

Town Hall, St. John Street, Launceston, Tasmania 7250.
P.O. Box 396. AusDoc DX 70127. Launceston.
Telephone (003) 37 1111. Fax (003) 37 1117.

HISTORICAL ENGINEERING MARKER

NOMINATION

FROM: Engineering Heritage Committee - Tasmania Division

DATE: 14th November, 1991

TO: Commemorative Plaque Sub-Committee
National Committee on Engineering Heritage
The Institution of Engineers, Australia
11 National Circuit
BARTON ACT 2600

The following work is nominated for an Historical Engineering Marker Award:

NAME OF WORK: Kings Bridge

LOCATION: Spanning the South Esk River at Launceston, Tasmania
Grid Ref. 55 GEQ 105 122, Map Sheet ~~8315 - St Patricks~~ 5041 - Launceston

OWNER: City of Launceston, Town Hall, St John St, Launceston
Tasmania, 7250

In support of the nomination the following information is provided:

(1) Proposed Wording of HEM:

This wrought iron arch bridge with a span of 190 feet (60 metres) was designed by Engineer William T. Doyne, constructed in Manchester, England, transported to Launceston and assembled on a floating dock. It was floated into position and lowered on to its abutments on the receding tide. The bridge was completed in 1864 providing a vital link with West Tamar region.
A duplicate span was constructed by Salisbury's Foundry and floated into position adjacent to the first in 1904.

(2) Justification:

The South Esk River emerges from the Cataract Gorge in the City of Launceston. In winter time it was prone to severe flooding and the scene was quite spectacular. However the ferry traffic between Launceston and Trevallyn was disrupted for some days at a time and in order to avoid this situation the West Tamar Road Trust decided to bridge the river.

This bridge was designed by W.T. Doyne in 1861. At that time no facilities existed locally for the manufacture of such a structure and it was decided to have the arch manufactured by Charles de Bergue Co. of Manchester, England, assembled in sections of a size suitable for shipping and forwarded to Launceston for final assembly.

2/...

Because of the problems associated with shipping the arch such a distance the design aimed at keeping the structure as light as possible. Robert H.M. Garvie in his description of the bridge writes as follows:

> "It is noteworthy that the total weight of all iron work in the first span sent out in 1863 was recorded as no more than 105 tons. For a main road bridge of 190 feet span at that date this seems to me a remarkable achievement. Doyne's bridge represents a usage of only eighty pounds of iron for each square foot off deck and this figure compares very creditably with practice today, despite all the improvements in methods and adoption of entirely new materials since 1863."

The first arch was only 15 feet wide and in 1903 another arch of the same width was constructed by Salisbury's Foundry of Launceston and placed in position on January, 1904 five feet downstream from the original making a structure with a total deck width of 35 feet. As there was difficulty in site erection of the arches they were, in both instances, fabricated on a floating dock and towed into position to be lowered into place by the falling tide. A number of other bridges have been placed in this manner but no other instances is known of an arch bridge being so placed.

It is now 128 years since the first arch was brought into use, and there has been a tremendous increase in the weight and volume of traffic, yet the structure designed so economically is still serving and it appears likely to continue to do so for many years.

The following documentation is attached in support of this nomination:

1. Paper "W.T. Doyne, Bridge Builder, and Kings Bridge, South Esk, Launceston by Robert M.H. Garvie to the Tasmania Heritage Research Association, April, 1967, Vol. 14, No. 4

2. King's Bridge - A Marvel by Halves - Feature in Launceston "Examiner", Saturday, 7th May, 1988.

3. Bridge Over River Esk, Tasmania - The Engineer, July 27th, 1866 Page 60.

4. Three black and white photos 175 x 125mm and one composite black and white photo 325 x 110 of Kings Bridge.

5. Letter from City of Launceston 8th June, 1990 supporting nomination.

The nomination has been discussed with the owner of the Bridge, the Council of the City of Launceston, who have agreed to the nomination in their letter of 8th June, 1990 attached.

3/...

In the event of this nomination being approved a suitable presentation/unveiling ceremony will be organised by Tasmania Division.

S.E. MERRY
Chairman
Nominating Sub Committee

K.C. DREWITT
Chairman
Nominating Committee

T.C. HUGHES
Secretary
Nominating Sub Committee

W.D. FREESTUN
Secretary
Nominating Committee

15th November, 1991

Copy - Kings Bridge - Design & Construction - 3 pages - provided by K.C.D to Committee Meeting, Melbourne Nov 91.
- Photo copy map 5041 sent to Bob Breen 28/11/91

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Facsimile:

Date: 5 June 1992

Total no. pages (including this one) 1

To: Ken McInnes, Chairman, Commemorative Plaque Sub-Committee

Fax number: (03) 669 1912 (also by mail)3/6/81

From: Robert Breen, BOE Executive Officer

Subject: KINGS BRIDGE HEM, LETTER OF APPROVAL

The Institution of Engineers, Australia
NATIONAL OFFICE

[The Institution of Engineers, Aust... ENGINEERING HERITAGE COMM...
DATE RECEIVED
ACTION
DETAILS]

Ken,

We now have unanimous agreement that the Kings Bridge, Launceston be awarded an Historic Engineering Marker plaque. Would you please now formally write to the Tasmania Division advising of the approval?

The HEM plaque wording has as contained in my fax of 21 May 92 has been agreed except that Ray suggests that the word "FLOATING" in the fourth line is unnecessary. I have spoken to David Freestun of Tasmania Division who agrees the word should be removed. So, unless I am advised to the contrary, that is the way I will order the plaque.

Would you please let me have a copy of your formal advise letter for the file?

Rob

R A Breen
Executive Officer

c,c, Deane Kemp
David Freestun
Secretary, Tasmania Division

Engineering House 11 National Circuit Barton ACT 2600 Phone (06) 270 6555 Fax (06) 273 1488

THE INSTITUTION OF ENGINEERS, AUSTRALIA
Tasmania Division

ENGINEERING HERITAGE COMMITTEE

A Report on the Plaquing of King's Bridge - Launceston

Following the approval of King's Bridge, as a suitable structure to receive a Historic Engineering Marker, a ceremony was arranged to present the plaque to the Launceston City Council on the 3rd of October, 1992.

The presentation ceremony was organised by the members of the Northern sub-committee of the Tasmanian Engineering Heritage Committee.

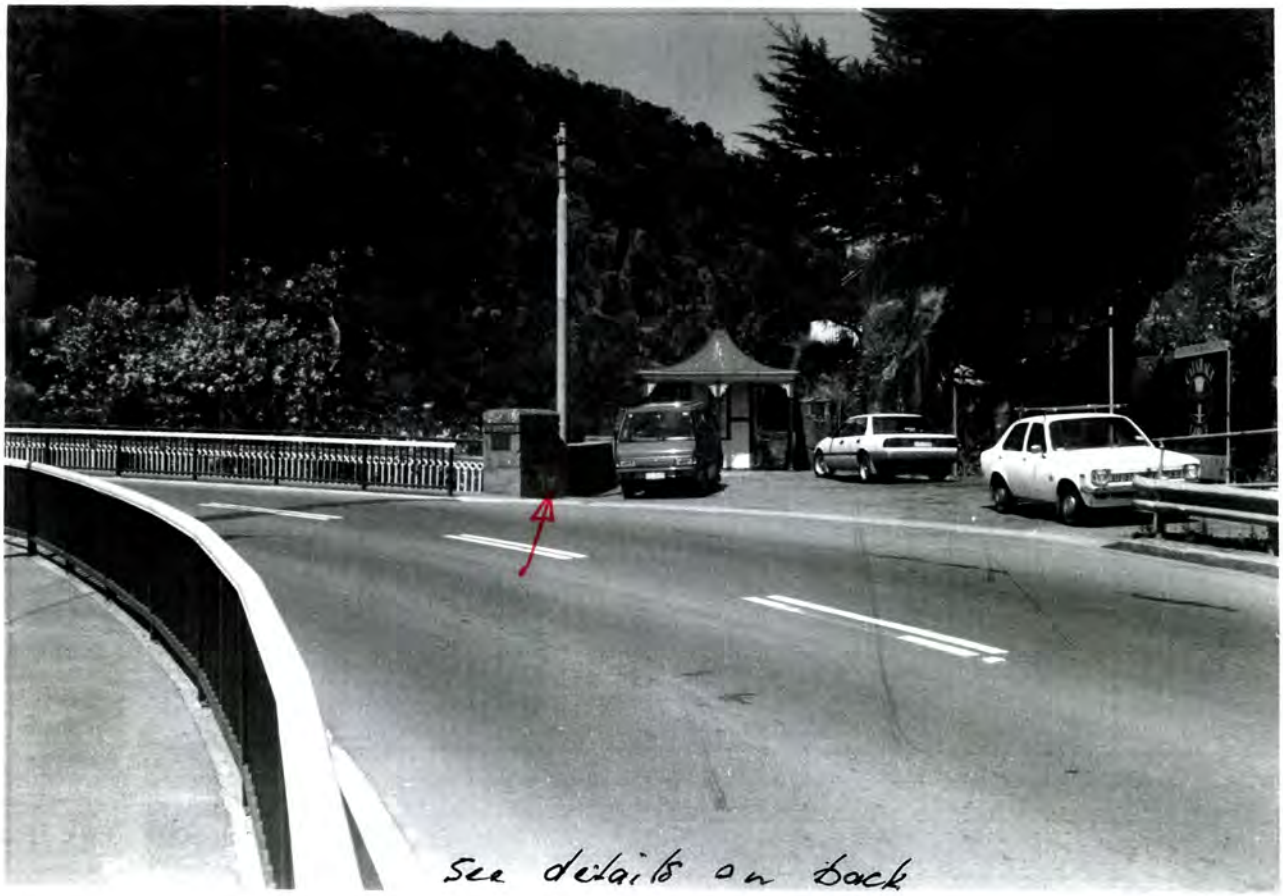
The ceremony took place on a sunny afternoon in a small park area close to the bridge in the presence of about 70 people including Professor Angus Buchanan and delegates to the Sixth National Engineering Conference on Engineering Heritage who were on the pre-conference tour.

Mr. Stan Merry introduced the Chairman of the Tasmania Division, Mr. Tony Haig, who gave a short address on behalf of the Institution and then invited the Mayor of Launceston to unveil the plaque.

The Mayor, Alderman Beams, outlined the history of the bridge and its significance to the people of Launceston noting that the original span of the bridge was now 129 years old.

After unveiling the plaque the Mayor then invited guests to afternoon tea at the Town Hall.

Before going to tea the guests inspected the Bridge and at a later date the plaque was fixed to the approach parapet on the Northern upst



See details on back

WILLIAM T. DOYNE - CIVIL ENGINEER

DESIGNER OF THE KINGS BRIDGE

William Doyne was trained in Civil Engineering in England on the London South Western Railway. His Chief Engineer formed such a high opinion of his abilities that he recommended him for a post on the construction of a railway then being built near Hamburg in Germany.

He continued his railway construction career as Manager and Engineer for the Rugby and Leamington Railway in England. It was for this railway that he designed and built a wrought-iron lattice bridge, which was the subject of two prize-winning papers he presented to the Institution of Civil Engineers. He was admitted to full membership of that body in 1852.

He pursued his engineering career in Ireland, Ceylon and New Zealand before being appointed to Tasmania to design the Launceston and Western railway track construction and prepare a report on same.

As the town of Launceston grew and traffic increased, the residents naturally demanded a bridge across the Cataract Gorge. However, the Government would not build one, and it was not within the powers of the Launceston Town Council. A body named the West Tamar Road Trust had the good sense to engage the services of a professional engineer and had the good fortune to find a very experienced one in W.T. Doyne.

After considering several different proposals the Trust accepted the design with which we are all familiar, the wrought iron arch. The Parliament passed an enabling Act in 1861. The contract for the fabrication of the iron members was awarded to Charles de Bergue of Manchester England in December 1862. The parts were received in Launceston in July 1863, the arch was assembled on Mr Weedon's floating dock and on 12th December 1863 was towed into position and lowered on the bridge abutments on the outgoing tide.

The Examiner reported as follows:

"The South Esk Bridge is a structure which stamps the Engineers as masters of their profession and it forms a beautiful monument to their skills."

The Institution of Engineers, Australia

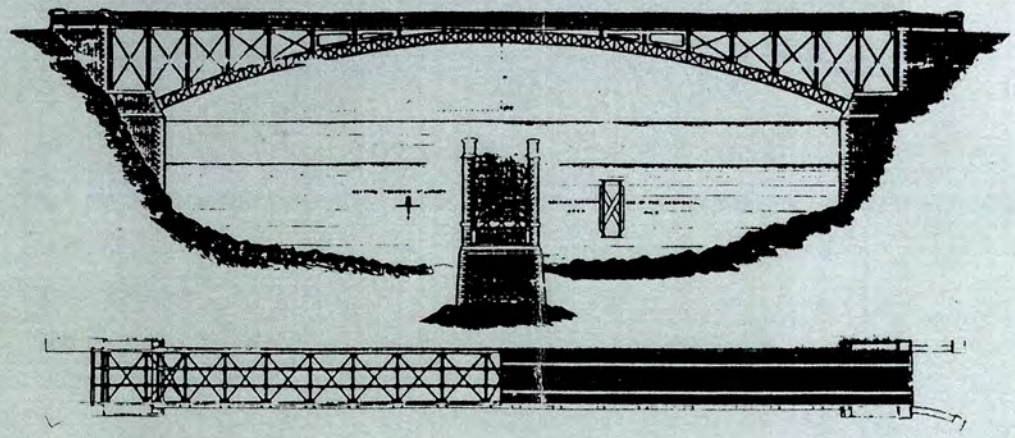
Official Ceremony
for the unveiling of an

HISTORICAL MARKER

KINGS BRIDGE LAUNCESTON

First span officially opened 1864.

Second span officially opened 1904.



KINGS BRIDGE

The elegant wrought iron arch bridge of lattice girder design and rivetted construction has a span of 60 metres.

It was designed by Civil Engineer William T. Doyne, fabricated at the Manchester works of De Bergue & Co and shipped to Tasmania.

Weighing 105 tons the span was assembled on a pontoon, floated into position and then lowered onto its abutments on the receding tide on 11th December, 1863. The total cost of the completed bridge and approaches was ~~one~~ twelve thousand ~~two~~ hundred pounds.

The duplicate adjoining span, fabricated by Salisburys Foundry in Launceston was similarly erected and floated into position in 1904.

Australian Engineering Plaquing Programme.

The Australian Engineering Plaquing Programme has been developed as a means of giving deserved recognition to historic engineering works and sites. Programmes of this kind have been running in the United States of America and the United Kingdom for many years. A similar programme was adopted by the Institution of Engineers, Australia in 1985.

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Programme for the Ceremony to be held at

Launceston on Saturday 3rd October, 1992 at 3.00 p.m..

Master of Ceremonies:

Mr S.E. Merry M.J.E. Aust
Chairman,
Northern Sub Committee, Engineering Heritage Committee,
Tas. Division, The Institution of Engineers, Australia

Welcoming Address and Presentation:

Mr A. Haig M.I.E. Aust.
Chairman of the Tasmanian Division,
The Institution of Engineers, Australia.

Unveiling of Historical Engineering Marker:

His Worship the Mayor of Launceston,
Alderman Graeme W. Beams.

Conclusion:

Mr S.E. Merry M.I.E. Aust.

File
KINGS
BRIDGE
CF5 -
To 50

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON, 3rd. OCTOBER 1992. 1

L-R. Mr. G.W.Stokes, Mrs. Beams, Mr. S.E.Merry, (Chairman Northern Sub-Committee Eng. Heritage). Mr. G.Beams,(Mayor), Mr. A.Haig, (Chairman, Tasmania Division I.E.AUST.)

Neg. 92-1-0A.

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON, 3RD. OCTOBER 1992.

L-R. Mr. G.W.Stokes, Mrs. Beams, Mr. A.Haig, (Chairman Tasmania Division,I.E.AUST.)> Mr. G.Beams (Mayor), Mr. S.E.Merry, (Chairman, Northern Sub-Committee, Eng.Heritage)

Neg. 92-1-1A. 4

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON, 3RD.OCTOBER 1992.

L-R. Mr. G.W.Stokes, Mrs. Beams, Mr. G.Beams, (Mayor), Mr. S.E.Merry, (Chairman, Northern Sub-Committee Eng. Heritage), Mr. A.Haig, (Chairman, Tasmania Division, I.E.AUST).

Neg.92-1-4A.

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON, 3RD. OCTOBER 1992.

L-R. Mrs. Beams, Mr. S.E.Merry,(Chairman Northern Sub-Committee Eng. Heritage). Mr. A.Haig,(Chairman, Tasmania Division, I.E.AUST.), Mr. G.Beams (Mayor) unveiling plaque on temporary stand.

Neg. 92-1-6A.

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, ↑
LAUNCESTON, 3RD. OCTOBER 1992

Some of the spectators at the plaque unveiling ceremony.
Neg. 92-1-2A.

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Dr. R.A. Buchanan & Mr. A.L. Haig

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON,

Bronze plaque after mounting on sandstone abutment on western end of bridge.

Neg. 92-1-10A. Taken 13th. November 1992.

HISTORIC ENGINEERING MARKER, KING'S BRIDGE, LAUNCESTON,

Western approach to the bridge showing location of marker. It is mounted on the shadowed side of the sandstone abutment in the centre of the photograph

Neg. 92-1-11A Taken 13th. November 1992.

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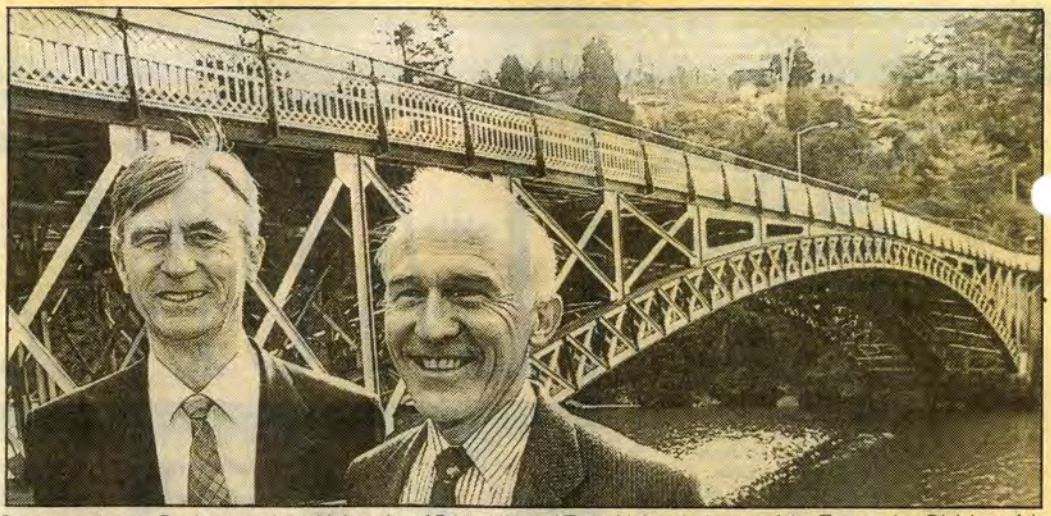
The Institution of Engineers, Aust
(TASMANIA DIVISION
ENGINEERING HERITAGE COMMITTEE
DATE RECEIVED 6 NOV '92.
ACTION file Bridges CF 5.1
DETAILS KINGS BRIDGE.

CF T0055

Historic plaque for King's Bridge

"Launceston Week" 22 Oct. 1992. AHS



● Professor Angus Buchanan of the University of Bath, UK and Tony Haig, chairman of the Tasmanian Division of the Institute of Engineers Australia at the unveiling of the commemoration plaque at King's Bridge.

Launceston's original link over the South Esk River, King's Bridge, was finally commemorated by the Institution of Engineers, Australia on October 3.

The commemoration, only the second of its type in Tasmania (the first was the Richmond Bridge), was symbolised with a historic marker.

The Institution of Engineers, Australia was holding a special meeting in Hobart and made the journey to Launceston especially to pay tribute to this magnificent structure.

The Australian Engineering plaquing programme has been developed as a means of recognising noteworthy historic engineering works and sites. Programmes of this kind have been run in the US and the UK for several years, with the Australian programme beginning in 1985.

Officially opened in 1864, the graceful wrought iron structure did away with the need for ferry services for those wishing to reach the West Tamar.

The West Tamar Road Trust considered several proposals before finally accepting that of Mr W.T. Doyne who was also involved in the planning of the Launceston and Western Railway.

It was fabricated at the Manchester works of De Bergue & Co. before being shipped to Tasmania where the 105 ton span was assembled on a pontoon and placed in its present position on the receding tide on December 11, 1863.

The duplicate adjoining span, fabricated by Salisbur[illegible] Foundry in Launceston, w[illegible] similarly erected and floated into position in 1904.

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